

REMARKS

Claims 1-2, 4, 6-7 and 10-11 are pending in this application, of which claims 1 and 4 have been amended. Claims 3, 5, 8, 9 and 12-31 have been canceled. No new claims have been added.

Claims 1-2 and 4 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent 6,727,579 to Eldridge et al. (hereafter, "Eldridge et al.").

Applicants respectfully traverse this rejection.

Eldridge et al. discloses contact structures exhibiting resilience or compliance for a variety of electronic components which are formed by bonding a free end of a wire to a substrate, configuring the wire into a wire stem having a springable shape, severing the wire stem, and overcoating the wire stem with at least one layer of a material chosen primarily for its structural (resiliency, compliance) characteristic. A variety of techniques for configuring, severing, and overcoating the wire stem are disclosed. In an exemplary embodiment, a free end of a wire stem is bonded to a contact area on a substrate, the wire stem is configured to have a springable shape, the wire stem is severed to be free-standing by an electrical discharge, and the free-standing wire stem is overcoated by plating. A variety of materials for the wire stem (which serves as a falsework) and for the overcoat (which serves as a super-structure over the falsework) are disclosed. Various techniques are described for mounting the contact structures to a variety of electronic components (e.g., semiconductor wafers and dies, semiconductor packages, interposers, interconnect substrates, etc.), and various process sequences are described. The

resilient contact structures described herein are ideal for making a “temporary” (probe) connections to an electronic component such as a semiconductor die, for burn-in and functional testing. The self-same resilient contact structures can be used for subsequent permanent mounting of the electronic component, such as by soldering to a printed circuit board (PCB).

FIG. 33, cited by the Examiner, shows a multilayer substrate 3320 having a plurality of resilient contact structures extending from its upper (as viewed) side 3320a for connecting to an electronic component 3302, and a plurality of resilient contact structures extending from its lower (as viewed) side 3320b for connecting to an electronic component such as a mother board (not shown).

A first group (set) 3322 of resilient contact structures are mounted to and extend from a first level on the face 3320a of the PCB 3320 to a given “height” above the PCB. An electronic device 3370, such as a decoupling capacitor, is also mounted to the face 3320a of the PCB 3320.

Thus, FIG. 33 clearly shows that decoupling capacitor 3370 is not entirely embedded in substrate 3320 because it is not covered on its top surface by the substrate, in contrast to the present invention, in which embedded capacitor 20 is entirely covered on its top surface by the build-up interconnection layer 14, as shown in FIG. 4.

More specifically, in FIG. 33, the capacitor is provided in a depression formed in a build-up substrate and there is formed a gap between the capacitor and the sidewall or bottom surface of the depression, in which the capacitor is provided. Thus, the capacitor of Eldridge et al. is not enclosed or surrounded “closely”, in contrast to the meaning of the word “embed.”

U.S. Patent Application Serial No. 10/621,445
Response to Office Action dated November 7, 2005

According to Webster's New World Dictionary, Third College Edition, "embed" means to "set or fix firmly in a surrounding mass." Clearly, the capacitor of Eldridge et al. is not set or fixed firmly in a surrounding mass.

Thus, contrary to the disclosure of Eldridge et al., the capacitor of the present invention fully meets the dictionary definition of "embedded."

Accordingly, claim 1 has been amended to recite this distinction.

Thus, the 35 U.S.C. § 102(e) rejection should be withdrawn.

Claims 6-7 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Eldridge et al. in view of Fukuzumi et al. (previously applied).

Applicants respectfully traverse this rejection.

Fukuzumi et al. has been cited for teaching a capacitor having a dielectric film of a complex oxide containing at least one metal element selected from the group of Sr, Ba, Pb, Zr, Mg and Nb, but fails to teach, mention or suggest the limitations of claim 1, amended as proposed, from which claims 6-7 depend.

Thus, the 35 U.S.C. § 103(a) rejection should be withdrawn.

The Examiner has allowed claims 10-11.

In view of the aforementioned amendments and accompanying remarks, claims 1-2, 4, 6-7 and 10-11, as amended, are in condition for allowance, which action, at an early date, is requested.

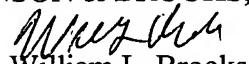
U.S. Patent Application Serial No. 10/621,445
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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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